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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,023	11/16/2001	Teck H. Hu	29250-000598	5167

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EXAMINER	
HAILE, FEBEN	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/004,023	HU ET AL.	
	Examiner	Art Unit	
	Feben M Haile	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5-7, 9-12, 14-16 and 18* is/are rejected.

7)☒ Claim(s) *4,8,13 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *February 06, 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Double Patenting

1. Claim 9 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 2. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 6, 15, 9-11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,684,354), hereinafter referred to as Fukushima in view of Fransson et al. (US 6,445,706), hereinafter referred to as Fransson.

Regarding claim 1 and 10, Fukushima discloses a method within an apparatus comprising: receiving data packets, each data packet having a priority indicator and a transmission sequence number **(column 2 lines 25-30; a transmitting end conveys packets with information relating to its sequence and priority to a receiving end)**, the priority indicator indicating a priority class

of the data packet **(it is obvious to one of ordinary skill in the art that a priority indicator in a packet specifies the class of the packet)**.

Fukushima further teaches storing packets in a retransmission buffer according to their priorities **(column 2 lines 34-35)** and retransmitting packets from the retransmission buffer according to their sequence number **(column 2 lines 43-46)**.

I would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fukushima to incorporate a plurality of buffers, since it has been held that mere duplication of the essential working parts of a device involves only routing skill in the art. St. Regis Paper Co. v. Bemis Co., 193 UPSQ 8.

Fukushima fails to teach the transmission sequence number indicating a sequence of transmission for data packets of a same priority class; and each buffer is associated with a different priority class;

Fransson discloses that for each priority class there is a sequence number **(column 5 lines 19-20)**; and a buffer structure comprising a set of queues or buffers, where each buffer or queue is set for each priority class **(column 2 lines 24-25)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fukushima to incorporate the idea of a sequence number being associated with a priority class and having a number of queues within a single buffer structure for each priority class as taught by

Fransson. The motivations being to ensure a fair share of bandwidth between different classes of services that have different priorities.

Regarding claims 2, 9, 11, and 18, Fukushima, as modified by Fransson disclose the limitations of base claims 1 and 10.

Fukushima further teaches a count comparison unit that compares a retransmission count of a packet that needs to be retransmitted with a sequence number of a packet in a retransmission buffer **(column 22 lines 10-19)**, where a packet is retransmitted when the sequence number and a retransmission count of the packet are paired **(column 22 lines 57-61)**, and a retransmission count is incremented when a packet is retransmitted **(column 22 lines 41-45)**.

I would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Fukushima and Fransson to incorporate a plurality of counters for each of the buffers, since it has been held that mere duplication of the essential working parts of a device involves only routing skill in the art. St. Regis Paper Co. v. Bemis Co., 193 UPSQ 8.

Regarding claims 6 and 15, Fukushima discloses a method within an apparatus comprising: receiving data packets, each data packet having a priority indicator and a transmission sequence number **(column 2 lines 25-30; a transmitting end conveys packets with information relating to its sequence and priority to a receiving end)**, the priority indicator indicating a priority class of the data packet **(it is obvious to one of ordinary skill in the art that a priority indicator in a packet specifies the class of the packet)**; and storing

the data packets in a single buffer **(column 2 lines 34-35; storing packets in a retransmission buffer according to their priorities)**; and outputting the data packets from the buffer in sequence of transmission based on the transmission sequence number and the priority indicator of the data packets **(column 8 lines 63-67; a packet with a sequence number corresponding to a priority value is retransmitted from the retransmission buffer)**.

Fukushima fails to teach the transmission sequence number indicating a sequence of transmission for data packets of a same priority class.

Fransson discloses that for each priority class there is a sequence number **(column 5 lines 19-20)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fukushima to incorporate the idea of a sequence number being associated with a priority class as taught by Fransson. The motivations being to ensure a fair share of bandwidth between different classes of services that have different priorities.

3. Claim 3, 5, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,684,354), hereinafter referred to as Fukushima.

Regarding claim 3 and 12, Fukushima discloses a method within an apparatus comprising: receiving data packets, each data packet having a priority indicator and a transmission sequence number **(column 2 lines 25-30; a transmitting end conveys packets with information relating to its sequence**

and priority to a receiving end) the priority indicator indicating a priority class of the data packet **(it is obvious to one of ordinary skill in the art that a priority indicator in a packet could specify a class of the packet)**, and the transmission sequence number indicating a sequence of transmission for the data packets **(it is obvious to one of ordinary skill in the art that a transmission sequence number in a packet could specify the sequence of transmission for the packet)**; and storing the data packets in a single buffer **(column 2 lines 34-35; storing packets in a retransmission buffer according to their priorities)**; and outputting the data packets from the buffer in sequence of transmission based on the transmission sequence number of the data packets **(column 2 lines 43-46; retransmitting packets from a retransmission buffer according to their sequence number)**.

Regarding claims 5 and 14, Fukushima discloses a method within an apparatus comprising: providing a counter, comparing a counter value of the counter with the transmission sequence numbers of the data packets stored in the buffer **(column 22 lines 10-19, a count comparision unit compares a retransmission count of a packet that needs to be retransmitted with a sequence number of a packet stored in a retransmission buffer)**; outputting, based on the comparison, a data packet having the same transmission sequence number as the count value **(column 22 lines 57-61; a packet is retransmitted when the sequence number and retransmission count of the packet are paired)**; incrementing the count value when the outputting step outputs a data packet **(column 22 lines 41-45; retransmission count is incremented when**

the packet is retransmitted); and repeating the comparing, outputting and incrementing steps **(it is obvious to one of ordinary skill that the steps of comparing, outputting and incrementing could be repeated every time a packet needs to be retransmitted)**.

4. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US 6,684,354), hereinafter referred to as Fukushima in view of Fransson et al. (US 6,445,706), hereinafter referred to as Fransson, in view of Jones (US 2004/0008714).

Regarding claim 7 and 16, Fukushima, as modified by Fransson, disclose the limitations of base claims 6 and 15.

However, they fail to teach wherein the buffer is a random access memory.

Jones discloses a method and apparatus for storing data packets in a packet buffer random access memory **(page 1 paragraph 0009)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Fukushima and Fransson to incorporate the packet buffer random access memory taught by Jones. The motivation being that the packet buffer random access memory system includes input and output queue management functions that allow input data to be placed on output data queues without coping the data into a new output queue.

Allowable Subject Matter

5. Claims 4, 8, 13 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a) Blanc et al. (US 20040141510), CAM Based System and Method for Re-sequencing Data Packets

b) Michiel (US 20020057706), Method and Arrangement for Prioritized Data Transmission of Packets

c) Ando et al. (US 20020044556), Multiplexer and Priority Control Method for Packet Data Transmissions

d) Hata et al. (US 20020021700), Data Transmission Apparatus and Method

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Feben M Haile whose telephone number is (571) 272-3072. The examiner can normally be reached on 6:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FH 06/24/2005

RICKY NGO
PRIMARY EXAMINER

9/27/05